UNITED NATIONS

World Chronicle

PROGRAMME: No. 656, recorded 29 January 1997

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FRESHWATER RESOURCES

Pierre NAJLIS, Chief of the Energy and Natural Resources Branch of the United Nations Department for Policy Coordination and Sustainable Development, discusses water as an essential natural resource. Water shortages are caused not only by insufficient rain or snowfall, but by poor allocation and wasteful use of freshwater resources combined with a lack of adequate management action. Many rivers of the world as well as lakes and underground water reservoirs are contaminated by human, industrial and agricultural wastes. The world community acts as a catalyst to assist countries to take preventive measures and find solutions to their water problems. Some countries have made reductions in the amount of water needed for irrigation and industrial and municipal purposes by using more effective water management systems and better technologies. Mr. Najlis believes that, although water is still inexpensive, there is a growing market for water as a tradable commodity.

WORLD CHRONICLE is produced by the Media Division, Department of Public Information, United Nations, New York, NY 10017, U.S.A.

Duration: 28:00"
Executive Producer: Kamil Taha
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ANNOUNCER: From United Nations Headquarters in New York, this is **World Chronicle**, an unedited interview programme about major global issues. Here now to introduce our guest is the host of today's **World Chronicle**.

LITTLEJOHNS: I'm Michael Littlejohns, and this is **World Chronicle**.

A report recently issued by the United Nations indicates that population increase and human activities are depleting the freshwater resources of the world at an alarming rate. By the year 2025, two thirds of the world population will experience serious water shortages, which could put global food supplies in jeopardy and lead to economic stagnation in many parts of the world. The result could be a series of local and regional crises with global implications. Are water shortages unavoidable? Are our natural supplies inadequate? And what can the international community do to reverse this trend?

Our guest today is one of the authors of the report and an expert on freshwater resources. He is Pierre Najlis, Chief of the Energy and Natural Resources Branch of the United Nations Department for Policy Coordination and Sustainable Development. Joining me to talk with Mr. Najlis are Mohamed Saad of the Voice of America and Ian Steele of The Press Foundation of Asia.

Mr. Najlis, welcome to World Chronicle.

NAJLIS: Thank you.

LITTLEJOHNS: Mr. Najlis, it may be rather difficult for some of us here in the New York area to understand that there's a water shortage after all the rainfall we've been experiencing for months now. I think '96 was probably a record year in terms of the downpours. And of course elsewhere in the United States there have been extremes of waterfall, in the Pacific Northwest, and in the case of snow, along the Canadian border in New York State, where I read somewhere that they'd had 90-odd inches of snow in a matter of two or three weeks. What is the real problem? I mean, is it simply that some areas are getting huge amounts of rainfall and others are not getting enough? In other words, that the dispersal of rain, water resources, is inadequate? What is the real problem?

NAJLIS: Well, you have a real problem in terms of the geographical distribution of rainfall or snowfall. It's very unequal throughout the world. You have areas that are very dry and areas that can be very wet or suffer tremendous variations in the amount of rainfall for a period.

LITTLEJOHNS: But is it more unequal now than it used to be, for example?

NAJLIS: No, no. It's a question of changes, variations that can happen at any given time. You don't have to go that far. For instance, in the New York area we had a drought situation not that long ago where water had to be allocated very carefully. And in California the same thing, they suffered a drought. So you have those changes occasionally. The

problem with water shortages, as they are called, water shortages, is not so much whether the water is there or not; the problem essentially is one of human adaptation in terms of the consumption and productive patterns to the amount of water that is there. This can also happen in terms of floods as well. You can see in many areas where populations have settled in flood plains, where populations were not there before. And as a consequence you have had tremendous losses, financial losses and human loss, because of the settling in areas where floods — that are very flood prone —

LITTLEJOHNS: What solutions does the United Nations propose?

NAJLIS: Well, the solutions are essentially local and national in nature. It's up to government, it's up to the communities themselves to take the solutions. What we can do in a sense is just to try to build a consensus in terms of the number of principles and number of policy options that are available that we believe Governments ought to follow. But it's essentially up to Governments to design their own policies and up to communities to participate in the design of those policies. Of course, you have a problem when it comes to rivers that are shared by more than one country, international rivers. In that sense, the international community can be instrumental in bringing consensus, in bringing an agreed approach among the countries to have a harmonious development of those resources.

SAAD: It seems there are a lot of agencies that collaborated on this report. Did you consult with other Governments on these findings?

NAJLIS: Well, yes. We had a large number of United Nations agencies that were involved in this. Right here, for instance, in New York, we have our Department, we have the Department of Development Support and Management Services, we have UNDP, we also have UNEP, FAO, UNESCO, WHO, WMO, the World Bank and UNIDO. In addition, we worked very closely with the Stockholm Environment Institution, and with the support of the Swedish Government and other Governments — the Canadian Government, the Government of Norway and other countries. Yes, indeed, we did have that kind of consultations. It has been an extremely complex approach to the whole question.

SAAD: I mean other Governments like in Africa and Asia, Governments that depend on long rivers, like Egypt, Sudan, and Asia, like China, India. Did you consult with them?

NAJLIS: No, we basically had to go on the basis of available data to ourselves. And we had a number of consultants from different places and a number of background reports that were prepared from experts from different parts of the world. But the governmental consultation process will start now with the Commission on Sustainable Development.

STEELE: If you look at a water map of the world, there are quite a few surprises. Saharan Africa, in particular, sub-Saharan Africa, if you look at the data, many of the

countries that we consider to be desert in fact have water resources, spasmodic but reasonable rainfall. It's a question more with the Nile and the Niger River of management of water resources, and then the political implications of that. These countries obviously don't have the resources to build dams at will, to bring the necessary resources to bear to get an adequate distribution, which was a problem that Michael was touching on. To what extent are you involved in political solutions, means of seeing that everybody gets their bit of the supply?

NAJLIS: Well, we can serve as a catalyst among the different countries in terms of bringing political agreement in the sharing of the resource. But what you're also talking about is the financial aspect of it. One of the serious problems that we have with water resources, and this is something that in fact is dealt with in Agenda 21 and also in a conference that we had in Dublin in 1991 —

LITTLEJOHNS: Agenda 21 is the thing that came out of the World Environment Summit.

NAJLIS: That's correct, yes.

LITTLEJOHNS: The Earth Summit, as it was called.

NAJLIS: Yes. And there's a chapter in there that specifically deals with water resources. One of the problems is that water has to be considered as a scarce resource. And it has economic value. Of course there are very strong social considerations in there. But until and unless there is a method of recognizing the value of the resource and having systems for payment for the use of the resource that are fair, that are equitable and that lead to an efficient allocation of the resource, it will be very difficult to obtain the necessary financing for the development and use of the resource. External support agencies can play a very significant role in this regard, and Governments play an even more important role in this regard, but in the final analysis, if you don't solve this question of who is going to pay for the resource, it's going to be virtually impossible to develop the kind of financial resources that we need.

STEELE: Isn't the international community already paying in the sense that water has become a source of conflict, a source of refugee movements, a source of demand for humanitarian relief? Somewhere down the line, whether you're putting the money into a dam or into an irrigation system, or whether you're paying to clean up a humanitarian crisis, you're paying for water.

NAJLIS: Absolutely.

STEELE: I mean, the implication on the map is the same. So that argument must be pretty well known. Is anybody doing anything about it?

NAJLIS: Well, one of the things that we mention in the report here, that it's — in the final analysis it's cheaper to take preventive measures than it is to take corrective measures. That unless we take care of the environment, unless we take care of the basic human needs here and now, taking care of the consequences later on is going to — first of all, the consequences could be disastrous in some cases, and the corrective measures would be far more costly in terms of finances, in terms of human suffering, than what preventive measures and developmental measures would be.

STEELE: Well, we have the Law of the Sea, which has helped to sort out some of the difficulties offshore. But what about an onshore organization that was focused on land-based and underground water resources?

NAJLIS: Well, the International Law Commission has been dealing with this problem for at least the last 20 years that I'm aware of, and they're working with this framework convention for the non-navigational uses of watercourses, I believe they call it. So there has been a long and sustained effort in this regard. However, the problem is extremely complex.

STEELE: Is it more complex than offshore water resources with all the complications of oil and fish migration? Is it more complex? Or is this body not working the way it should? What are the problems here?

NAJLIS: I would hate to make a comparison in terms of whether it's more complex or not. I also would not see the work of the International Law Commission as something that is not working the way it should. The efforts have been extraordinary, and it's just the nature of the complexity of the problem, the interests involved, the perceptions of the problem, the perceptions of the interests of the different parties. We prefer to think — you were talking about conflicts before — we prefer to think in terms of emphasizing the possibilities for cooperation and the opportunities and the benefits involved in cooperation rather than thinking in terms of conflicts. And I believe that there is a very strong evolution towards this kind of perception, that if there is cooperation in terms of the developing of basins, the opportunities for maximizing benefits are much larger than otherwise.

SAAD: Given that dim picture the report presents to us, don't you think it is urgent to have an authority that deals with these conflicts as a preventive measure, before it happens, like the Law of the Sea [International Seabed] Authority?

NAJLIS: Well, first of all, let me say we did paint a fairly dim picture, but not a deterministic picture in terms of a doomsday scenario. Mr. Littlejohns, you mentioned in fact that the report foresees the possibility that two-thirds of the world population could find itself in a rather difficult situation. This does not need to be the case. Measures can be implemented. The tools are here now to deal with that problem, so that this is not a

forecast; in fact, it's a scenario — we say "what if?" measures are not taken. But the last thing we would like to see is the scenario become a reality. Many of the solutions, most of the solutions are still of a national nature. Of course, in terms of international watercourses there is a question of international cooperation, and there is I think a great deal of room for a consensus on principles and principles of behaviour, principles of consumption and allocation of water that could be followed by countries. But I do not believe that we are in a situation where you can have a world authority of water resources that could be in charge of taking care of all the problems. That would be an abrogation of the responsibility at the national and local level, where the responsibility and the methods for implementation really are to be found.

LITTLEJOHNS: This is World Chronicle. Our guest is Pierre Najlis, Chief of the Energy and Natural Resources Branch of the United Nations Department for Policy Coordination and Sustainable Development.

STEELE: Are there any large-scale technological fixes on the horizon? We're talking here about 2 per cent of the planet's water resources. We've got the other 98-plus per cent offshore in salt form. But water desalination, for example: We have the solar power, we have all kinds of energy options now to make water desalination less costly. What are the possibilities? What are the options? Particularly for the Middle East, where you have a tremendous problem, where water is really a more volatile commodity even than oil.

NAJLIS: Well, desalination is still a very expensive method. It can be used for high value products — tourism being one of them, for instance — but in terms of using it as a method for delivering cheap water in great quantities, it's still not there. We tend to put too much emphasis, I believe, on the technological aspect of it. Not that it's not important. But what we have very often is a serious problem on institutional structures on policies, formulation and implementation. This is where the problem still is. We still talk about the fact that the management of water resources in most countries is fragmented among different organizations with often contradictory goals that cannot be achieved altogether. There is still a fragmentation between land management and water management, a fragmentation between inland waters and oceans. We have to bear in mind the fact that 80 per cent of the pollution in oceans and coastal areas is coming from inland waters and from the use of land itself. So until and unless we begin to integrate these aspects, we are not going to make much progress.

Just to give you an example, on the question of pollution, in many cases in developed countries particularly, the fact that they have implemented the "polluter pays" principle has made tremendous changes, not only in the amount of pollution dumped into the waters, but in the amount of water used. Because many of the industries have had to revert to recycling

of water resources. There is a tremendous potential for recycling of water from domestic sources in cities and using that for production of agricultural products in some areas. In many countries where water is particularly short, what may have to happen is a shift from the production of certain things to the production of high value products. There is an expression that is being used now, the import of virtual water it's called, whereby you stop producing low value food products and in fact exporting them — you're exporting water, and you use your water for high value products that will generate foreign exchange and will allow you in turn to import the food that you need. And this is one of the things that is pointed out in this report.

STEELE: Is anybody doing that?

NAJLIS: Pardon?

STEELE: Is anybody doing that? Israel —

NAJLIS: Israel is one case in point, and I think other countries in the Middle East are turning towards this kind of a shift. Of course, in some cases it's relatively easy, although never easy, but it's relatively easy to implement this kind of shift when you have a population that already has developed a great deal of skills. But in other countries, in the less developed countries, for instance, if you're going to have the shift, you would also have to manage social changes to make sure that the poor don't end up being poorer and the first ones to go bankrupt in these shifts. The shift will be necessary in many cases, but it has to be managed. So we have been saying — in fact if you'll go back to 1977 when we had the United Nations Water Conference, we already were saying at that point that the problem is essentially one of management and one of institutions.

LITTLEJOHNS: Which countries, Mr. Najlis, are doing the best job, would you say, in terms of management?

NAJLIS: Oh, heavens, I would hate to make a —

LITTLEJOHNS: You mentioned Israel, but are there countries in Africa, for example, that have big problems? Are they managing to cope?

NAJLIS: By and large I think there aren't that many countries that are coping efficiently with water resources because of this fragmentation of interests, and sometimes because of the division of the responsibilities between federal and states or even municipalities. So it's very difficult to obtain this kind of an integrated approach that we are recommending. It's very easy to talk about it, but the implementation of the concept is far more difficult.

LITTLEJOHNS: Would you say that water is too cheap?

NAJLIS: In many cases, yes, it is. One of the co-authors of the report pointed to a passage in the *Wealth of Nations* by Adam Smith in which he says that water is an essential

element for life and a diamond is a luxury, but water has no value and diamonds are very expensive. It's a question of realizing the nature of the scarcity that is there. When water becomes a tradeable commodity, and it has a value, it can be traded, then you begin to be able to manage it, to allocate it. Yes, by and large, water is too cheap. Subsidies are rampant in many cases, whether it be in the agricultural sector or in other sectors. And what is very sad about it is that in many cases subsidies are not achieving the purpose that they are designed to achieve, namely, to help the poor. But in effect subsidies are in many cases benefitting the rich in many places.

LITTLEJOHNS: So as a trading commodity, do you envisage the possibility in the future that huge supertankers will be taking water from the super-abundant rainfall of the United States to some places that have it in short supply?

NAJLIS: It's happening already. I think it's in the Caribbean in some places where you have supertankers that are making a return trip with water. It is happening, and it is something that has been talked about for many, many years. But before that — you see, again, we are turning towards technological situations — before you do that, in many cases there are options in terms of managing the demand for water that will limit tremendously the amount of water that has to be used. And the policies, the instruments are here. It's just a question of applying them. In many cases you have cities where water is being delivered to houses without being metered.

LITTLEJOHNS: In a developed country like the United States, France, whatever, what is the average consumption per person?

NAJLIS: It varies. It varies tremendously. The United States, I don't recall the figure now, but the per capita use in the United States is considerably higher than it is in other European countries.

STEELE: It's around 208 litres per person per day.

NAJLIS: I do not recall. But again there is a tremendous variation. We tried to look into this question of the correlation between the GNP and the use of water. We did not find a correlation per se. Perhaps we didn't use enough variables. But when we started clustering different per capita uses according to groups of income, we found out that it is possible to find the highly developed countries that are using relatively small amounts of water while other highly developed countries are using much larger amounts of water. Or even developing countries that are using considerably large amounts of water. But in effect the amount of water that you can use, unless you really are in a desert situation where there is virtually no water, need not be an impediment to development. But the question is how are you going to structure your economy, taking into account the basic human needs? How

are you going to structure your economy in order to be able to achieve the economic development that you want?

SAAD: Going back to the situation in the Middle East, as Ian said, how do you envisage the role of the United Nations in preventing such conflicts, if it may take place? Like the case in Turkey, Iraq and Syria; or the Israeli Government and the Palestinian Authority, concerning the aquifers and the underground water.

NAJLIS: I would see the role of the United Nations system, in fact the role of the international community, as one of facilitators, one of catalysts, in terms of helping countries to resolve their different views if they are conflicting, in terms of assisting them to develop programmes that will benefit all of them, and to the extent that resources are available within the international community, to make these resources available in order to use that as a motivator in terms of designing programmes that will be of mutual benefit.

LITTLEJOHNS: Before we came on camera, Mr. Najlis, I mentioned the absence in your report of any mention of the use or abuse of water for such things as irrigating golf courses, et cetera, and you mentioned that high quality drinkable water was being used for these purposes, and that a better alternative would be to use grey water, so-called. Is anything being done to encourage the use of grey water and to stop the use of such high quality water?

STEELE: Grey water being treated water?

LITTLEJOHNS: Grey water being the sort of water that is okay for irrigation but not for drinking.

NAJLIS: Well, the re-use of waste water is becoming increasingly popular, and there is a greater and greater realization of the value of this kind of water. So action is being taken in many places with regard to the use of waste water, not only for irrigating golf courses but in fact for food production. However, I don't think one should take a completely negative view in terms of using water for golf courses or other recreational activities, taking into account that tourism is an industry that can bring a great amount of foreign exchange, of wealth, to a country. So in effect, there is value to the use of water for these purposes. The question is do you really have to use that high quality water for this purpose, or do you have alternatives.

LITTLEJOHNS: And the UN is encouraging the use of lower quality water to —

NAJLIS: Oh, yes. There are a number of organizations, including the UN itself, and the World Health Organization, FAO, that have been encouraging and designing projects that are aimed at the safe use of waste waters.

LITTLEJOHNS: Of course, there's not very much one can do about increasing the flow of rivers, but some countries, notably South Africa, are very deficient in rivers, and I

understand that they use catchment systems. Does the UN recommend a greater use of catchment systems, perhaps, in countries that have a problem?

NAJLIS: Oh, yes. Definitely. There are a number of projects by all the organizations concerned where they are going to recommend a number of technologies, including low cost technologies. In the case of water supply and sanitation, for instance, if we are going to provide safe water supply and sanitation to poor communities throughout the world, we have to think in terms of low cost technologies that are very efficient in delivering the services. Otherwise it might be very difficult to achieve the goal that one would have to achieve of full coverage for everybody.

LITTLEJOHNS: Solar can be used for water purification? Solar stills or whatever?

NAJLIS: Yes, it can be used. I'm not an expert in the field, I would not be able to tell you to what extent it's efficient in terms of delivering large quantities of low cost —

LITTLEJOHNS: Mr. Najlis, that's all the time we have. Thank you for being with us on this edition of World Chronicle.

NAJLIS: My pleasure.

LITTLEJOHNS: Our guest has been Pierre Najlis, Chief of the Energy and Natural Resources Branch of the United Nations Department of Policy Coordination and Sustainable Development. He was interviewed by Mohamed Saad of the Voice of America and Ian Steele of the Press Foundation of Asia.

I'm Michael Littlejohns. Thank you for joining us. We invite you to be with us for the next edition of World Chronicle.

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